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L18: Entry 18 of 23

File: USPT

Aug 15, 1995

DOCUMENT-IDENTIFIER: US 5442646 A

TITLE: Subcarrier communication system

Detailed Description Paragraph Right (22):

Thus, traffic information data can be communicated to mobile units at a high data rate utilizing a subcarrier of a commercial FM channel broadcast channel. The traffic information data is supplied to the STIC modulator 110 in the form of a plurality of consecutive bits from the traffic information processor 70. The received digital data is encoded with a forward error correcting code, by the encoder 112, which convolutionally codes the digital data. Subsequent to encoding the data, the sequence of encoded data bits are interleaved, the order of the bits being altered such that consecutive bits of the encoded digital data are separated by a predetermined number of bits. The interleaved encoded data is then divided into a plurality of data frames, each of the data frames 510 being formed by a plurality of data subframes 514. To each of the data frames 510 a synchronization subframe 512 is added. The division of the encoded digital data into data frames 510 includes the addition of a channel test word to each of the subframes 512, 514, the channel test word being defined by a predetermined sequence of a plurality of bits. Thus, each data field is preceded and followed by a channel test word.

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L3: Entry 10 of 15

File: USPT

Jul 11, 2000

DOCUMENT-IDENTIFIER: US 6088387 A

TITLE: Multi-channel parallel/serial concatenated convolutional codes and trellis coded modulation encoder/decoder

Brief Summary Paragraph Right (4):

In addition to the long delay for transmitting large turbo blocks, the prior art techniques, do not address the multi-tone modulation environments. In multi tone communications, multiple channels, each identified with a separate frequency carrier, are employed to transmit data. In a multi tone system, the channel characteristics vary from channel to channel and advantages are achieved by allowing the constellation sizes to vary from channel to channel; hence the name which is short for multiple tones. For example, determining how many parity bits to send is based on selecting a code rate that provides the highest possible information bit rate. The code rate, however, is a single parameter that must be traded against constellation size and signal-to-noise ratio (SNR). But in a multi tone environment, these are allowed to vary from channel to channel.

Brief Summary Paragraph Right (9):

To eliminate the processing delay associated with transmitting large turbo blocks, this patent application proposes spreading a single turbo block across multiple channels. So, for example, if there are 512 channels in a multicarrier system and each channel carry 2 bits per symbol, the receiver can receive an entire turbo block plus parity bits in a couple of symbol times. In turbo code, the code rate and the constellation size can be varied selectively based on the channel characteristic. For example, turbo code produces at least two parity bits for each information bit. However, it is rare that the highest throughput is obtained by sending all the parity bits (the lowest code rate). The overhead is too high (that is, the code rate or ratio of information bits to total bits is too low) for the benefit of having so many parity bits. Thus, in using turbo codes, transmitters remove parity bits in a process of puncturing. Given a channel attenuation and noise level, one can find by simulation, the optimum number of parity bits to transmit and the optimum constellation size for the given power constraints. That is, constellation size is traded against signal-to-noise ratio and code rate for a fixed bit error rate and channel characteristic (attenuation and noise and whatever other characteristics may be folded into the channel model used for simulation) to optimize the number of information bits transmitted at the given BER.

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L9: Entry 3 of 4

File: USPT

Aug 10, 1999

DOCUMENT-IDENTIFIER: US 5936972 A

TITLE: Syndrome-based channel quality or message structure determiner

Detailed Description Paragraph Right (14):

FIG. 2 shows a block diagram of the message structure determiner 160 shown in FIG. 1 according to the preferred embodiment. In a variable message structure convolutional coding environment, the message structure determiner 160 uses syndrome vectors to estimate the BER of symbol-by-symbol detected data to ascertain the received signal quality and determine the most likely transmitted message structure. In this embodiment, the transmitted message structure can be varied in length, type of interleaving, source data rate, convolutional code used, and any combination of the above. This embodiment may also be modified to allow only certain properties to be varied or only allow certain combinations of the above properties to be varied.

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L25: Entry 1 of 1

File: USPT

Sep 11, 2001

DOCUMENT-IDENTIFIER: US 6289486 B1

TITLE: Adaptive channel encoding method and device

Detailed Description Paragraph Right (2):

Referring to FIGS. 5 and 6, information bits $d_{sub.k}$ are simultaneously fed to the first component encoder 410 and the interleaver 430. The interleaver 430 modifies the order in which the information bits are arranged and, preferably, maximizes a minimum Hamming distance of an encoded output sequence ($X_{sub.k}$, $Y_{sub.k}$) corresponding to the information bits $d_{sub.k}$. A data frame input to the channel encoder is variable in length because a CRC (Cyclic Redundancy Check) bit and other control bits are added to data. To forcedly fix the data frame length, dummy bits should be added depending on the difference between frame size and interleaver size. But, since these dummy bits have nothing to do with improvement of system performance, it is desirable to reduce them. Thus, the interleaver 430 provides excellent performance and reliable operation regardless of a variation in frame size-associated parameters.

Detailed Description Paragraph Right (3):

FIG. 7 is a block diagram of the diagonal interleaver 432 and the circular shifting interleaver 434 shown in FIGS. 5 and 6, respectively. Both the diagonal and circular shifting interleavers 432 and 434 analyse their corresponding variable frame sizes upon receipt of information bits and perform an optimum interleaving on the input information bits by interleaver related parameters received from a system controller according to the frame size analysis results. The diagonal interleaver 432 and the circular shifting interleaver 434 are combined into one in description of the embodiments of the present invention, however, a turbo encoder may specifically employ either diagonal interleaving or circular shifting interleaving, separately. Hereinbelow, the diagonal interleaver 432 and the circular shifting interleaver 434 are referred to as the interleaver 430.



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**An intrafield DCT-based HDTV coding for ATM networks***Kou-Hu Tzou*

Circuits and Systems for Video Technology, IEEE Transactions on

Published: June 1991

Volume: 1 2 , Page(s): 184 -196

**CITATION and
ABSTRACT**



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An algebraic model for computing the maximum throughput of pipelined protocol processors

- Cardona, M.; Satake, T.; Tsujii, S.

Dept. of Electr. & Electron. Eng., Tokyo Inst. of Technol., Japan

This Paper Appears in :

Global Telecommunications Conference, 1993, including a Communications Theory Mini-Conference. Technical Program Conference Record, IEEE in Houston. GLOBECOM '93., IEEE

on Pages: 1827 - 1833 vol.3

This Conference was Held : 29 Nov.-2 Dec. 1993

1993

ISBN: 0-7803-0917-0

IEEE Catalog Number: 93CH3250-8

Total Pages: 4 vol. (xxxix+2021+xvi+148)

References Cited: 7

Accession Number: 4790402

Abstract:

Presents an algebraic model for computing the maximum throughput of pipelined protocol processors. The model supports concurrent processing at pipeline stages, packet segmentation/assembling, and packet processing time dependent on packet length. Two examples are given. In the first example, the throughput of a single pipeline stage is computed. In the second example, the maximum throughput achievable by an idealized pipelined processor for FDDI, class I LLC, IF, and TCP is computed. Also, the authors show that the formula given in Hirata et al. (1992) is a special case of a formula derived in the present paper. <

Subject Terms:

FDDI; protocols; pipeline processing; channel capacity; digital communication systems; packet switching; data communication systems; open systems; performance evaluation; maximum throughput; pipelined protocol processors; algebraic model; concurrent processing; packet segmentation; packet segmentation assembling; packet processing time; packet length; single pipeline stage; idealized pipelined processor; FDDI; class I LLC; IF; TCP



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CNF		<u>Communication processing techniques for multimedia systems</u> <i>Maruyama, M.; Nakano, O.; Nishimura, K.; Nakano, H.</i> Singapore ICCS '94. Conference Proceedings. Published: 1994 Volume: 3 , Page(s): 974 -980 vol.3
CNF		<u>Soft product assembly and manipulation</u> <i>Turner, C.; Davies, A.; Parkin, R.M.; Knight, J.A.G.</i> Intelligent Automation for Processing Non-Rigid Products, IEE Colloquium on Published: 1994 , Page(s): 4/1 -4/5
CNF		<u>The high speed assembly of flexible confectionery packages</u> <i>Hodgson, D.C.; Ekerol, H.</i> Intelligent Automation for Processing Non-Rigid Products, IEE Colloquium on Published: 1994 , Page(s): 7/1 -7/3
CNF		<u>A protocol for WDM star coupler networks</u> <i>Kannan, B.; Fotedar, S.; Gerla, M.</i> INFOCOM '94. Networking for Global Communications., 13th Proceedings IEEE Published: 1994 , Page(s): 1536 -1543 vol.3
CNF		<u>An algebraic model for computing the maximum throughput of pipelined protocol processors</u> <i>Cardona, M.; Satake, T.; Tsujii, S.</i> Global Telecommunications Conference, 1993, including a Communications Theory Mini-Conference. Technical Program Conference Record, IEEE in Houston. GLOBECOM '93., IEEE Published: 1993 , Page(s): 1827 -1833 vol.3
PER		<u>An intrafield DCT-based HDTV coding for ATM networks</u>



Kou-Hu Tzou

Circuits and Systems for Video Technology, IEEE Transactions on

Published: June 1991

Volume: 12 , Page(s): 184 -196

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<u>L6</u>	('5943371')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L6</u>
<u>L5</u>	('20010055290' '5943371' 'US 6108810A' '6357029')[ABPN1,NRPN,PN,TBAN,WKU]	7	<u>L5</u>
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 or sub\$1fram\$3) same (combin\$7 or add\$4 or
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L27 ('6289486')[ABPN1,NRPN,PN,TBAN,WKU]2 L27L26 L25 and I210 L26

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 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or
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123 and (cod\$3 or encod\$3 or decod\$3) same (fram\$3 or
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<u>L24</u>	or QoS or rate near error or "ber" or paramet\$6 or character\$7) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	357	<u>L24</u>
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<u>L21</u>	('WO 9950963A')[ABPN1,NRPN,PN,TBAN,WKU]	1	<u>L21</u>
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<u>L17</u>	(super near frame or sub\$1frame) and l7	0	<u>L17</u>
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<u>L10</u>	('5936972')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L10</u>
<u>L9</u>	l7 and (convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7) same (quality near service or QoS or rate near error or "ber")	4	<u>L9</u>
<u>L8</u>	l7 and (convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7) same (quality near service or QoS)	2	<u>L8</u>
	(convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same		

<u>L7</u>	(packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	20	<u>L7</u>
<u>L6</u>	('20010055290' '6233709' '20010050622')[ABPN1,NRPN,PN,TBAN,WKU]	5	<u>L6</u>
<u>L5</u>	l4 and cod\$3 same turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	3	<u>L5</u>
<u>L4</u>	turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	18	<u>L4</u>
<u>L3</u>	('6289486')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L3</u>
<u>L2</u>	l1 and SAMSUNG ELECTRONICS and turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	1	<u>L2</u>
<u>L1</u>	SAMSUNG ELECTRONICS and turbo	66	<u>L1</u>

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L31: Entry 6 of 9

File: USPT

Nov 23, 1999

DOCUMENT-IDENTIFIER: US 5991454 A

TITLE: Data compression for TDOA/DD location system

Detailed Description Paragraph Right (30):

Referring now to FIG. 3, the coding and packing of the compressed signal is illustrated in block diagram or flow chart form. It should be appreciated that the data which now represents the WT coefficients at the input of FIG. 3 may be regarded as two bit streams: (i) the quantized WT coefficients which will be transmitted as a variable length bit stream referred to as the data stream, and (ii) the quantizer step size, .DELTA., represented in binary using 8 bits, the 256 quantizer bit sizes, b.sub.k, each represented in binary using 3 bits, and an error checking parameter, preferably .SIGMA.b.sub.k represented in binary using 11 bits, which will be transmitted as a fixed length bit stream referred to as the header. Of the two, accuracy of transmission of the header information is more critical. Thus separate encoding of the two streams allows tailoring the encoding process to the requirements of each stream which may result in some efficiencies in some applications of the invention as will be apparent to those skilled in the art. The particular coding scheme and code are not critical to the practice of the invention, but Gray coding in conjunction with forward error correction (FEC) is much preferred since such coding minimizes the impact of bit errors which may occur in the data link.

Detailed Description Paragraph Right (32):

After Gray encoding each respective data stream is then further encoded using FEC encoders 315 and 325 which introduce redundancies into the bit streams to allow correction of a limited number of errors in the received bit stream without the need to invoke a repeated transmission. The design of each of these two FEC encoders must be matched to the characteristics of the data link as will be apparent to those skilled in the art. A convolutional encoder is the preferred implementation form for FEC encoder 315 due to the variable length of the data bit stream; the amount of redundancy added by this encoder should be chosen to match the need imposed by the data link, but a rate 3/4 encoder should be sufficient in most cases. The FEC encoding of the header bit stream via encoder 325 consists of three types of coding, one type for the quantizer sizes, b.sub.k, one type for the quantizer step size, .DELTA., and one type for the error checking parameter, .SIGMA.b.sub.k. The quantizer sizes b.sub.k after Gray coding, consist of 768 bits which can be coded into a single Reed-Solomon (RS) code word using an RS(256,96) code on 8-bit symbols. Encoder 325 does this by grouping the 768 bits to be coded into 96 8-bit symbols that then get coded into 256 8-bit symbols according to the theory of Reed-Solomon codes. The quantizer step size, .DELTA., after Gray coding, consists of a single 8 bit word. The four most significant bits are coded into a single Bose-Chadhuri-Hocquenghem (BCH) code word using a BCH(7,4); the resulting 7-bit code word is the appended to the front of the four least significant of the quantizer step size, .DELTA., which gives an 11-bit word. This 11-bit word is then encoded by encoder 325 into a 31-bit code word using a BCH(31,11) code. Finally, the error checking parameter, .SIGMA.b.sub.k, after Gray coding, is an 11-bit word and it is encoded by encoder 325 into a 31-bit code word using BCH(31,11) code word. These code words are then concatenated together to form the encoded header. The degree of correction available for the header provides extremely robust and exceptionally well-protected communication even over extremely poor and noisy data links.

Detailed Description Paragraph Right (48):

In addition, because the transmitted data bit stream has a fixed size per block in the variant form of the invention described above as opposed to a variable size per block in the preferred embodiment, it is possible to use a block-based forward error correction code (as opposed to a convolutional code preferably used in the preferred embodiment of the invention) as will be apparent to those skilled in the art in light

of the foregoing description of the invention. A block-based code, of course, permits exploitation of known length of portions of the bit stream in the error correction process such that less redundant information and, therefore, fewer bits need to be transmitted. This feature of the variant form of the invention thus allows a greater portion of the specified bandwidth to be allocated to the transmission of data descriptive of the received signal waveform.

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Term:

130 and (convolution\$4 or turbo) near2 (cod\$3 or
 encod\$3 or decod\$3) same vari\$8 near (frame or
 size or length) same (quality near service or QoS
 or rate near error or "ber" or paramet\$6

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<u>L31</u>	130 and (convolution\$4 or turbo) near2 (cod\$3 or encod\$3 or decod\$3) same vari\$8 near (frame or size or length) same (quality near service or QoS or rate near error or "ber" or paramet\$6 or character\$7)	9	<u>L31</u>
<u>L30</u>	129 and (convolution\$4 or turbo) near2 (cod\$3 or encod\$3 or decod\$3) same vari\$8 near (frame or size or length)	54	<u>L30</u>
<u>L29</u>	(convolution\$4 or turbo) near2 (cod\$3 or encod\$3 or decod\$3) and vari\$8 near (frame or size or length)	347	<u>L29</u>
<u>L28</u>	(convolution\$4 or turbo) near2 (cod\$3 or encod\$3 or decod\$3) same frame size	34	<u>L28</u>
<u>L27</u>	('6289486')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L27</u>

<u>L26</u>	L25 and l21	0	<u>L26</u>
	l24 and (convolution\$4 or turbo) near2(cod\$3 or encod\$3 or decod\$3) same (fram\$3 or super\$1fram\$3 or sub\$1fram\$3) same (combin\$7 or add\$4 or compress\$3 or separat\$4 or divi\$5 or split\$4) same (quality		
<u>L25</u>	near service or QoS or rate near error or "ber" or paramet\$6 or character\$7) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	1	<u>L25</u>
	l23 and (cod\$3 or encod\$3 or decod\$3) same (fram\$3 or super\$1fram\$3 or sub\$1fram\$3) same (combin\$7 or add\$4 or compress\$3 or separat\$4 or divi\$5 or split\$4) same (quality near service		
<u>L24</u>	or QoS or rate near error or "ber" or paramet\$6 or character\$7) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	357	<u>L24</u>
	l22 and (cod\$3 or encod\$3 or decod\$3) same (fram\$3 or super\$1fram\$3 or sub\$1fram\$3) same (combin\$7 or add\$4 or compress\$3 or separat\$4 or divi\$5 or split\$4) same (quality near service		
<u>L23</u>	or QoS or rate near error or "ber" or paramet\$6 or character\$7) same (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	1683	<u>L23</u>
	(cod\$3 or encod\$3 or decod\$3) same (fram\$3 or super\$1fram\$3 or sub\$1fram\$3) same (combin\$7 or add\$4 or compress\$3 or separat\$4 or divi\$5 or split\$4) same (quality near service or QoS or rate near error or		
<u>L22</u>	"ber" or paramet\$6 or character\$7)	6042	<u>L22</u>
<u>L21</u>	('WO 9950963A')[ABPN1,NRPN,PN,TBAN,WKU]	1	<u>L21</u>
<u>L20</u>	('5442646')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L20</u>
<u>L19</u>	('6118825')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L19</u>
<u>L18</u>	(convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (super near frame or sub\$1frame)	23	<u>L18</u>
<u>L17</u>	(super near frame or sub\$1frame) and l7	0	<u>L17</u>
<u>L16</u>	L15 and l14	1	<u>L16</u>
<u>L15</u>	l9 and (cod\$3 or encod\$3 or decod\$3) and constituen\$3	1	<u>L15</u>
<u>L14</u>	('6233709')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L14</u>
<u>L13</u>	l9 and (cod\$3 or encod\$3 or decod\$3) same constituen\$3	1	<u>L13</u>
<u>L12</u>	l7 and (cod\$3 or encod\$3 or decod\$3) same constituen\$3	3	<u>L12</u>
	l7 and (convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7) same (quality near service or QoS or rate near error or "ber") same constituen\$3	0	<u>L11</u>
<u>L11</u>			
<u>L10</u>	('5936972')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L10</u>
	l7 and (convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3)		

<u>L9</u>	same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7) same (quality near service or QoS or rate near error or "ber")	4	<u>L9</u>
<u>L8</u>	l7 and (convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7) same (quality near service or QoS)	2	<u>L8</u>
<u>L7</u>	(convolution\$4 or turbo) near (cod\$3 or encod\$3 or decod\$3) same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	20	<u>L7</u>
<u>L6</u>	('20010055290' '6233709' '20010050622')[ABPN1,NRPN,PN,TBAN,WKU]	5	<u>L6</u>
<u>L5</u>	l4 and cod\$3 same turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	3	<u>L5</u>
<u>L4</u>	turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6) same (unit\$3 or re\$1assembl\$4 or combin\$7 or segment\$7)	18	<u>L4</u>
<u>L3</u>	('6289486')[ABPN1,NRPN,PN,TBAN,WKU]	2	<u>L3</u>
<u>L2</u>	l1 and SAMSUNG ELECTRONICS and turbo same (packet\$7 or leng\$7 or long or wid\$7 or siz\$3) near2 (program\$7 or adjust\$6 or vari\$4 or vary\$4 or configur\$7 or re\$1configur\$7 or re\$1defin\$6)	1	<u>L2</u>
<u>L1</u>	SAMSUNG ELECTRONICS and turbo	66	<u>L1</u>

END OF SEARCH HISTORY